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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,143	02/11/2005	Volker Henninge	264612US0XPCT	2418
22850	7590	09/05/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
RHEE, JANE J				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
09/05/2008		ELECTRONIC		

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/524,143
Filing Date: February 11, 2005
Appellant(s): HENNINGE ET AL.

Oblon, Spivak, McClelland, Maier and Neustadt, P.C.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/3/08 appealing from the Office action
mailed 4/14/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

20050084761	Hennige et al.	04-2005
JP10326607	Omae et al.	12-1998
6495292	Yen	12-2002

5389471

Kung

2-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1-12,24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10504144 in view of Omae et al. (JP10326607).

Copending application '144 discloses a separator comprising a flexible nonwoven having a porous inorganic coating on and in the nonwoven, the material of the

nonwoven being selected from nonwoven nonelectroconductive polymeric fibers, characterized by the nonwoven having a thickness of less than 30um and a porosity of more than 50% (claims 1 and 7). Copending application fail to disclose that the pores have a pore radius from 75-150um.

Omea et al. teaches a nonwoven separator with a pore radius of 75 um (paragraph 0006 from English translation) for the purpose of being excellent in solution retention and absorbency (paragraph 0004).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Copending application '144 with a pore radius of 75um in order to be excellent in solution retention and absorbency as taught by Omea et al.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6,9-12,24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen (6495292) in view of Omea et al (JP10326607).

As to claim 1, Yen discloses separators comprising a flexible nonwoven (col. 2 line 17-30) having a porous inorganic coating on and in said nonwoven (col. 2 lines 50-56), and wherein the material of said nonwoven is selected from non-woven,

nonelectroconductive polymeric fibers (col. 2 line 17-30), and wherein said nonwoven has a thickness of less than 30 .mu.m, (col. 3 line 67) a porosity of more than 50% (col. 2 line 67).

Yen fail to disclose a pore radius distributions in which at least 50% of the pores have a pore radius from 75 to 150 .mu.m.

Omae et al. teaches a nonwoven separator with a pore radius of 75 um (paragraph 0006 from English translation) for the purpose of being excellent in solution retention and absorbency (paragraph 0004).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with a separator comprising a pore radius of 75um in order to be excellent in solution retention and absorbency as taught by Omae et al.

As to claim 2, Yen discloses wherein said separator is less than 35 .mu.m in Thickness (col. 3 line 67).

As to claim 3, Yen discloses wherein said polymeric fibers are selected from fibers of polyacrylonitrile, polyester, polyolefin or mixtures thereof (col. 2 line 50-56).

As to claim 4, Yen discloses wherein said polymeric fibers are from 0.1 to 10 .mu.m in diameter (col. 3 line 46-48).

As to claim 5, Yen discloses wherein said flexible nonwoven has a base weight of less than 20 g/m.sup.2 (col. 4 line 1).

As to claim 6, Yen discloses wherein said nonwoven is from 5 to 30 .mu.m in Thickness (col. 3 line 67).

As to claim 9, Yen discloses wherein said separator is from 30 to 80% in porosity (col. 2 line 67).

As to claim 10, wherein by said separator has a breaking strength of more than 1 N/cm, Yen teaches the nonwoven polyolefin separator as desired by the applicant therefore, it is inherent that the separator has a breaking strength of more than 1N/cm. .

As to claims 11-12, wherein said separator is bendable around a radius down to 100 mm without damage or around a radius down to 1 mm without damage, since Yen discloses the a nonwoven polyolefin separator as desired by the applicant it would be inherent that the separator is bendable around a radius down to 100 mm without damage or around a radius down to 1 mm without damage.

As to claim 24 wherein the use of the separator is a separator in lithium batteries is intended use. It has been held that a recitation with respect to the manner in which the claimed particle is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987)

As to claim 25, Yen discloses a battery comprising the separator disclosed above (col. 1 line 11-12).

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen in view of Omae et al. and in further view of Kung (5389471).

Yen discloses the separator disclosed above.

As to claim 7, Yen discloses wherein said porous inorganic coating present on and in said nonwoven comprises oxide particles of the elements Al, Si and/or Zr (col. 2 lines 50-53).

Yen fail to disclose the oxide particles having an average particle size from 0.5 to 7 μm .

Kung teaches oxide particles having an average particle size from 0.5 to 7 μm for the purpose of providing a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with oxide particles having an average particle size from 0.5 to 7 μm in order to provide a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4) as taught by Kung.

As to claim 8, Yen discloses wherein said porous inorganic coating present on and in said nonwoven, comprises aluminum oxide particles which are adhered by an oxide of the elements Zr or Si (col. 2 lines 50-53).

Yen fail to disclose the oxide particles having an average particle size from 1 to 4 μm .

Kung teaches oxide particles having an average particle size of 1 μm for the purpose of providing a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Yen with oxide particles having an average particle size of 1 μm in order to provide a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4) as taught by Kung.

(10) Response to Argument

In response to appellant's argument that Yen does not disclose a porous inorganic coating, Yen teaches inorganic fillers that are added as part of the encapsulation sheath to improve the wettability of the nonwoven thus the inorganic fillers are considered the inorganic coating because the inorganic fillers is on and in the nonwoven material as desired by appellant's claim 1. In response to appellant's argument that the inorganic fillers do not make the encapsulation sheath inorganic, the inorganic fillers itself is considered the inorganic coating.

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yen teaches a wettable non woven battery separator and Omae et al. teaches a nonwoven battery separator that is excellent in liquid retaining and absorbing characteristics with pore

radius of 25-100um. Therefore, it would have been obvious to one having ordinary skill in the art at the time appellant's invention was made to provide, Yen with a separator comprising a pore radius of 75-150um in order to be excellent in solution retention and absorbency as taught by Omae et al. Both Yen and Omae et al. teaches *same nonwoven separator material* for the secondary batteries, therefore, it would have been obvious to provide the same separator material with optimal pore radius taught by Omae et al. in order to provide Yen with a separator comprising optimal results. Furthermore, Yen discloses that the separator surface pore size is at least 5 microns which reads on a pore radius of 75-100um because at least 5 microns is 5 microns or more.

In response to appellant's argument that Yen does not disclose any porosity for his separator because Yen refers to the wet porosity of the cellophane material disclosed as an exemplary material for the encapsulation sheath therein, the encapsulation sheath is part of the separator just as appellant's coating is part of appellant's separator therefore the porosity of the separator is disclosed by Yen.

In response to appellant's argument that there is not basis for inherency of the breaking strength, Yen teaches the nonwoven polyolefin separator as desired by the applicant therefore, it is inherent that the separator has a breaking strength of more than 1N/cm because the same materials should have the same physical properties. In response to appellant's argument that there is no basis for the inherency of the bendable limitation, Yen discloses the a nonwoven polyolefin separator as desired by the applicant it would be inherent that the separator is bendable around a

radius down to 100 mm without damage or around a radius down to 1 mm without damage.

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Yen teaches a wettable non woven battery separator and Kung teaches a wettable nonwoven separator. Yen teaches organic fillers in the nonwoven separator and Kung teaches organic fillers in the nonwoven separator. Yen fail to teach the particle size of the organic fillers and Kung teaches oxide particles having the desired average particle size for the purpose of providing a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4). Therefore, it would have been obvious to one having ordinary skill in the art at the time appellant's invention was made to provide, Yen with oxide particles having the desired average particle size from 0.5 to 7 .mu.m in order to provide a separator that is excellent in tensile strength, wicking properties, wettability and alkali resistance (col. 2 lines 3-4) as taught by Kung. In response to appellant's argument that the fillers of particle size disclosed by Kung would not be part of a coating, the fillers disclosed by Kung is a coating on and in the separator.

In response to appellant's argument that none of the prior art discloses aluminum oxide particles of any average particle size adhered by an oxide of Zr or Si, both Kung and Yen teaches that aluminum oxide particles and Zr or Si oxide among other inorganic particles can be used as fillers.

In response to the arguments concerning the double patenting rejection wherein Omae et al. does not that the pore size disclosed have any applicability in the battery separator claimed, Omae et al. teaches same nonwoven separator material for the secondary batteries, therefore, it would have been obvious to provide the same separator material with optimal pore radius taught by Omae et al. in order to provide copending application with a separator comprising optimal results such as being excellent in liquid retaining and absorbing characteristics.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jane Rhee/

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